Lucas, Z
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FILE 'REGISTRY' ENTERED AT 15:18:59 ON 06 DEC 2002
L1 42 SEA ABB=ON PLU=ON NANPNVDPNANPNANPNANP|IEYLNKIQNSLSTEWS PCSVT|EYLNKIQNSLSTEWSPCSVT/SQSP

FILE 'HCAPLUS' ENTERED AT 15:21:50 ON 06 DEC 2002
L2 30 SEA ABB=ON PLU=ON L1
L3 22 SEA ABB=ON PLU=ON L2 AND MALARIA#

L3 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:752116 HCAPLUS
DOCUMENT NUMBER: 137:289735
TITLE: Sequence of Plasmodium falciparum chromosomes 1, 3-9 and 13
AUTHOR(S): Hall, N.; Pain, A.; Berriman, M.; Churcher, C.; Harris, B.; Harris, D.; Mungall, K.; Bowman, S.; Atkin, R.; Baker, S.; Barron, A.; Brooks, K.; Buckee, C. O.; Burrows, C.; Cherevach, I.; Chillingworth, C.; Chillingworth, T.; Christodoulou, Z.; Clark, L.; Clark, R.; Corton, C.; Cronin, A.; Davies, R.; Davis, P.; Dear, P.; Dearden, F.; Doggett, J.; Feltwell, T.; Goble, A.; Goodhead, I.; Gwilliam, R.; Hamlin, N.; Hance, Z.; Harper, D.; Hauser, H.; Hornsby, T.; Holroyd, S.; Horrocks, P.; Humphray, S.; Jagels, K.; James, K. D.; Johnson, D.; Kerhornou, A.; Knights, A.; Konfortov, B.; Kyes, S.; Larke, N.; Lawson, D.; Lennard, N.; Line, A.; Maddison, M.; McLean, J.; Mooney, P.; Moule, S.; Murphy, L.; Oliver, K.; Ormond, D.; Price, C.; Quail, M. A.; Rabbinowitsch, E.; Rajandream, M.-A.; Rutter, S.; Rutherford, K. M.; Sanders, M.; Simmonds, M.; Seeger, K.; Sharp, S.; Smith, R.; Squares, R.; Squares, S.; Stevens, K.; Taylor, K.; Tivey, A.; Unwin, L.; Whitehead, S.; Woodward, J.; Sulston, J. E.; Craig, A.; Newbold, C.; Barrell, B. G.
CORPORATE SOURCE: The Wellcome Trust Sanger Institute, Hinxton, Cambridge, CB10 1SA, UK
SOURCE: Nature (London, United Kingdom) (2002), 419(6906), 527-531
CODEN: NATUAS; ISSN: 0028-0836
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Since the sequencing of the first two chromosomes of the **malaria** parasite, Plasmodium falciparum, there has been a concerted effort to sequence and assemble the entire genome of this organism. This report provides the sequence of chromosomes 1, 3-9 and 13 of P. falciparum clone 3D7; these chromosomes account for .apprx.55% of the total genome. The methods used to map, sequence and annotate these chromosomes is described. By comparing these assemblies with the optical map, the completeness of the resulting sequence is indicated. During annotation, Gene Ontol. terms were assigned to the predicted gene products, and clustering of some **malaria**-specific terms to specific chromosomes was obsd. A highly conserved sequence element was found in the intergenic region of internal var genes that is not assocd. with their telomeric counterparts.

IT **467522-97-0**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; sequence of Plasmodium falciparum chromosomes 1, 3-9 and 13)
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:142851 HCAPLUS
DOCUMENT NUMBER: 136:215388
TITLE: Immunogenic hepatitis B nucleocapsid protein (HBc) chimeric particles having enhanced stability
INVENTOR(S): Birkett, Ashley J.
PATENT ASSIGNEE(S): Apovia, Inc., USA
SOURCE: PCT Int. Appl., 290 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014478	A2	20020221	WO 2001-US41759	20010816
W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CO, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, MZ, NO, NZ, PL, RO, SG, SI, SK, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001085452	A5	20020225	AU 2001-85452	20010816

PRIORITY APPLN. INFO.:
US 2000-225843P P 20000816
US 2000-226867P P 20000822
US 2001-930915 A 20010815
WO 2001-US41759 W 20010816

AB A chimeric, carboxy-terminal truncated hepatitis B virus nucleocapsid protein (core protein or HBc) is disclosed that is engineered for both enhanced stability of self-assembled particles and the display of an immunogenic epitope. The immunogenic epitope is a B cell epitope or T cell epitope derived from pathogen such as Streptococcus pneumonia, Cryptosporidium parvum, HIV, foot and mouth disease virus, influenza virus, Yersinia pestia, etc. The display of the immunogenic epitope is displayed in the immunogenic loop of HBc, whereas the enhanced stability of self-assembled particles is obtained by the presence of at least one heterologous cysteine residue near the carboxy-terminus of the chimer mol. Methods of making and using the chimers are also disclosed.

IT **401552-42-9P**
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; chimeric proteins comprising HBcAg and T

and/or B cell epitope for use as vaccines)

IT **151113-09-6 401460-26-2 401460-27-3**
401460-29-5 401460-48-8 401460-49-9
401460-60-4 401461-03-8
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chimeric proteins comprising HBcAg and T and/or B cell epitope for use as vaccines)

IT **401556-50-1**
RL: PRP (Properties)
(unclaimed nucleotide sequence; immunogenic hepatitis B nucleocapsid protein (HBc) chimeric particles having enhanced stability)

IT **401556-53-4**
RL: PRP (Properties)
(unclaimed protein sequence; immunogenic hepatitis B nucleocapsid protein (HBc) chimeric particles having enhanced stability)

L3 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:142465 HCAPLUS
DOCUMENT NUMBER: 136:198912
TITLE: **Malaria** vaccines comprise Plasmodium CS protein and truncated hepatitis B virus nucleocapsid protein or HBcAg
INVENTOR(S): Birkett, Ashley J.
PATENT ASSIGNEE(S): Apovia, Inc., USA
SOURCE: PCT Int. Appl., 197 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002013765	A2	20020221	WO 2001-US25625	20010816
W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CO, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, MZ, NO, NZ, PL, RO, SG, SI, SK, TT, UA, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001084967	A5	20020225	AU 2001-84967	20010816

PRIORITY APPLN. INFO.:
US 2000-225813P P 20000816
US 2001-931325 A 20010815
WO 2001-US25625 W 20010816

AB A chimeric, carboxy-terminal truncated hepatitis B virus nucleocapsid protein (HBc) is disclosed that contains an immunogen for inducing the prodn. of antibodies to **malarial** proteins. An immunogenic **malarial** epitope is expressed between residues 78 and 79 of the HBc immunogenic loop sequence. The chimer preferably contains a **malaria**-specific T cell epitope and is preferably engineered for both enhanced stability of self-assembled particles and enhanced yield of those chimeric particles. Methods of making and using the chimers are also

disclosed.

IT **151113-09-6 401460-26-2 401460-27-3**
401460-29-5 401460-45-5
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antimalarial vaccines comprise Plasmodium CS protein and truncated hepatitis B virus nucleocapsid protein or HBcAg)

IT **401460-48-8 401460-49-9 401460-60-4**
401461-03-8
RL: PRP (Properties)
(unclaimed sequence; **malaria** vaccines comprise Plasmodium CS protein and truncated hepatitis B virus nucleocapsid protein or HBcAg)

L3 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:900440 HCAPLUS
DOCUMENT NUMBER: 137:92286
TITLE: Conversion of poorly immunogenic **malaria** repeat sequences into a highly immunogenic vaccine candidate
AUTHOR(S): Milich, David R.; Hughes, Janice; Jones, Joyce; Sallberg, Matti; Phillips, Tom R.
CORPORATE SOURCE: Vaccine Research Institute of San Diego (VRISD), San Diego, CA, 92121, USA
SOURCE: Vaccine (2001), 20(5-6), 771-788
CODEN: VACCDE; ISSN: 0264-410X
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The recent success of a Plasmodium falciparum **malaria** vaccine consisting of circumsporozoite protein (CSP) T and B cell epitopes has rekindled interest in the development of a pre-erythrocytic vaccine. In order to optimize immunogenicity, well-characterized CSP-specific neutralizing B cell epitopes and a universal T cell epitope were combined with an efficient and flexible particulate carrier platform, the hepatitis B core antigen (HBcAg), to produce a novel pre-erythrocytic vaccine candidate. The vaccine candidate, V12.PF3.1, is a potent immunogen in mice eliciting unprecedented levels (greater than 106 titers) of sporozoite-binding antibodies after only two doses. The anti-sporozoite antibodies are long lasting, represent all IgG isotypes, and antibody prodn. is not genetically restricted. CSP-specific CD4+ T cells are also primed by V12.PF3.1 immunization in a majority of murine strains. Furthermore, the hybrid HBcAg-CS particles can be produced inexpensively in bacterial expression systems. These and other characteristics suggest that V12.PF3.1 represents an efficient and economical P. falciparum vaccine candidate for use sep. or in combination with other formulations.

IT **401460-27-3**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(immunogenic **malaria** repeat sequences combined with HBcAg in development of highly immunogenic vaccine)

REFERENCE COUNT: 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:647507 HCAPLUS

DOCUMENT NUMBER: 136:289638
TITLE: Molecular cloning and sequencing of the circumsporozoite protein gene from Plasmodium falciparum strain FCC-1/HN and expression of the gene in mycobacteria
AUTHOR(S): Zheng, Chunfu; Xie, Peimei; Chen, Yatang
CORPORATE SOURCE: Institute of Infectious and Parasitic Diseases, The First Affiliated Hospital of Chongqing Medical University, Chungking, 400016, Peop. Rep. China
SOURCE: Journal of Clinical Microbiology (2001), 39(8), 2911-2915
CODEN: JCMIDW; ISSN: 0095-1137
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mycobacterium bovis bacillus Calmette-Guerin (BCG) has been used as a live bacterial vaccine to immunize more than 2 billion people against tuberculosis. In an attempt to use this vaccine strain as a vehicle for protective antigens, the Plasmodium falciparum gene from strain FCC-1/HN encoding circumsporozoite protein (CSP) was amplified from the P. falciparum genome, sequenced, and expressed in M. bovis BCG under the control of an expression cassette carrying the promoter of heat shock protein 70 (HSP70) from Mycobacterium tuberculosis. The recombinant shuttle plasmid pBCG/CSP was introduced into mycobacteria by electroporation, and the recombinant mycobacteria harboring pBCG/CSP could be induced by heating to express CSP; the mol. mass of recombinant CSP was about 42 kDa. This report of expression of the almost-full-length P. falciparum CSP gene in BCG provides scientific evidence for the application of the HSP70 promoter in expressing a foreign gene in BCG and in development of BCG as a multivalent vectoral vaccine for **malaria**.

IT **407646-80-4**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; mol. cloning and sequencing of the circumsporozoite protein gene from Plasmodium falciparum strain FCC-1/HN and expression of the gene in mycobacteria)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:26336 HCAPLUS
DOCUMENT NUMBER: 134:221126
TITLE: A totally synthetic polyoxime **malaria** vaccine containing Plasmodium falciparum B cell and universal T cell epitopes elicits immune responses in volunteers of diverse HLA types
AUTHOR(S): Nardin, Elizabeth H.; Calvo-Calle, J. Mauricio; Oliveira, Giane A.; Nussenzweig, Ruth S.; Schneider, Martin; Tiercy, Jean-Marie; Loutan, Louis; Hochstrasser, Denis; Rose, Keith
CORPORATE SOURCE: Department of Medical and Molecular Parasitology, New York University School of Medicine, New York, NY, 10010, USA
SOURCE: Journal of Immunology (2001), 166(1), 481-489

CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This open-labeled phase I study provides the first demonstration of the immunogenicity of a precisely defined synthetic polyoxime **malaria** vaccine in volunteers of diverse HLA types. The polyoxime, designated (T1BT*)4-P3C, was constructed by chemoselective ligation, via oxime bonds, of a tetrabranched core with a peptide module contg. B cell epitopes and a universal T cell epitope of the Plasmodium falciparum circumsporozoite protein. The triepitope polyoxime **malaria** vaccine was immunogenic in the absence of any exogenous adjuvant, using instead a core modified with the lipopeptide P3C as an endogenous adjuvant. This totally synthetic vaccine formulation can be characterized by mass spectroscopy, thus enabling the reproducible prodn. of precisely defined vaccines for human use. The majority of the polyoxime-immunized volunteers (7/10) developed high levels of anti-repeat Abs that reacted with the native circumsporozoite on P. falciparum sporozoites. In addn., these seven volunteers all developed T cells specific for the universal epitope, termed T*, which was originally defined using CD4+ T cells from protected volunteers immunized with irradiated P. falciparum sporozoites. The excellent correlation of T*-specific cellular responses with high anti-repeat Ab titers suggests that the T* epitope functioned as a universal Th cell epitope, as predicted by previous peptide/HLA binding assays and by immunogenicity studies in mice of diverse H-2 haplotypes. The current phase I trial suggests that polyoximes may prove useful for the development of highly immunogenic, multi-component synthetic vaccines for **malaria**, as well as for other pathogens.

IT **329019-45-6P**
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(a synthetic polyoxime **malaria** vaccine contg. P. falciparum B cell and universal T cell epitopes eliciting immune responses in diverse HLA haplotypes)

IT **151113-09-6P**
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(universal T epitope; a synthetic polyoxime **malaria** vaccine contg. P. falciparum B cell and universal T cell epitopes eliciting immune responses in diverse HLA haplotypes)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:509115 HCAPLUS
DOCUMENT NUMBER: 129:148063
TITLE: Universal T-cell epitopes for anti-**malarial** vaccines
INVENTOR(S): Nardin, Elizabeth; Moreno, Alberto
PATENT ASSIGNEE(S): New York University, USA

SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9831382	A1	19980723	WO 1998-US1527	19980121
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9859316	A1	19980807	AU 1998-59316	19980121
BR 9806971	A	20000314	BR 1998-6971	19980121
EP 1007081	A1	20000614	EP 1998-902726	19980121
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001509813	T2	20010724	JP 1998-534771	19980121

PRIORITY APPLN. INFO.: US 1997-33916P P 19970121
WO 1998-US1527 W 19980121

AB The present invention provides methods and compns. for eliciting protective immunity against **malaria**. In particular, the invention relates to universal T-cell epitopes that elicit T-cell responses in individuals of differing genetic backgrounds. Immunogenic compns. and vaccines comprising **malaria** -specific universal T-cell epitopes are disclosed.

IT **151113-09-6**
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(universal T-cell epitopes for anti-**malarial** vaccines)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:414678 HCAPLUS
DOCUMENT NUMBER: 129:64049
TITLE: Targeted nucleic acid delivery into liver cells using circumsporozoite protein complexed with polylysine as nucleic acid carrier
INVENTOR(S): Kuo, M. Tien; Ding, Zhi Ming
PATENT ASSIGNEE(S): Board of Regents , University of Texas System, USA
SOURCE: U.S., 34 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 5766899	A	19980616	US 1995-395602	19950227

AB Disclosed is a receptor-mediated complex that selectively delivers nucleic acid into hepatocytes. Circumsporozoite (CS) protein is the targeting ligand that recognizes a receptor expressed on the liver cell surface. The CS ligand is complexed with a polylysine component that can bind nucleic acid. The level of gene expression is greatly enhanced when the complex is cotransfected with adenovirus. Using the present invention, a reporter gene was successfully transferred into a no. of different cell lines that express high levels of receptor. The ability to introduce nucleic acid into specific mammalian cells is an important therapy for numerous diseases such as cancer, **malaria** and hepatitis.

IT **208947-67-5**
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CS antigen fragment; targeted nucleic acid delivery into liver cells using circumsporozoite protein complexed with polylysine as nucleic acid carrier)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:246174 HCAPLUS
DOCUMENT NUMBER: 129:66591
TITLE: Plasmodium falciparum polyoximes: highly immunogenic synthetic vaccines constructed by chemoselective ligation of repeat B-cell epitopes and a universal T-cell epitope of CS protein
AUTHOR(S): Nardin, E. H.; Calvo-Calle, J. M.; Oliveira, G. A.; Clavijo, P.; Nussenzweig, R.; Simon, R.; Zeng, W.; Rose, K.
CORPORATE SOURCE: Department of Medical and Molecular Parasitology, New York University School of Medicine, New York, NY, 10010, USA
SOURCE: Vaccine (1998), 16(6), 590-600
CODEN: VACCDE; ISSN: 0264-410X
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Effective immunoprophylaxis directed against the pre-erythrocytic stages of the **malaria** parasite requires a vaccine that can elicit humoral and cell mediated immunity in individuals of diverse genetic background. In order for a synthetic peptide **malaria** vaccine to meet these requirements, problems assocd. with genetic restriction, peptide chem., adjuvant formulation and physiochem. characterization of the final synthetic vaccine product must first be overcome. To address these issues, five polyoxime vaccine candidates have been constructed by ligating purified peptide epitopes of the P. falciparum CS protein to a branched template via oxime bonds. All five constructs, including two based on templates contg. the synthetic adjuvant tripalmitoyl-S-glyceryl cysteine (Pam3Cys), were of sufficient purity for characterization by mass spectrometry. The immunogenicity of the **malaria** polyoximes in different murine strains was compared to that of multiple antigen peptide (MAP) constructs synthesized by std.

step-wise synthesis. A tri-epitope polyoxime-Pam3Cys construct, based on the repeats and a universal T-cell epitope that contains both helper and CTL epitopes of the CS protein, was shown to be a precisely-defined synthetic **malaria** vaccine candidate that was highly immunogenic in murine strains of diverse H-2 haplotypes.

IT **208946-19-4P 208946-20-7P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(Plasmodium falciparum synthetic vaccines using B-cell and T-cell epitope polyoximes and the antibody response)

IT **151113-09-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(Plasmodium falciparum synthetic vaccines using B-cell and T-cell epitope polyoximes and the antibody response)

L3 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:476523 HCAPLUS
DOCUMENT NUMBER: 127:204127
TITLE: Binding of **malaria** T cell epitopes to DR and DQ molecules in vitro correlates with immunogenicity in vivo. Identification of a universal T cell epitope in the Plasmodium falciparum circumsporozoite protein
AUTHOR(S): Calvo-Calle, J. Mauricio; Hammer, Juergen; Sinigaglia, Francesco; Clavijo, Pedro; Moya-Castro, Z. Rosa; Nardin, Elizabeth H.
CORPORATE SOURCE: Dep. Medical and Molecular Parasitology, School Medicine, New York Univ., New York, NY, 10016, USA
SOURCE: Journal of Immunology (1997), 159(3), 1362-1373
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The efficacy of a **malaria** peptide vaccine would be enhanced by the inclusion of a parasite-derived universal T cell epitope to ensure that all vaccines develop parasite-specific cellular and humoral immunity. Two circumsporozoite (CS) protein T cell epitopes, previously identified by CD4+ T cell clones derived from Plasmodium falciparum sporozoite-immunized volunteers, were studied to det. their HLA class II binding potential. One epitope, located in amino acid (aa) 326-345 of the P. falciparum (NF54 strain) CS protein, was "universal" in that it could bind to multiple DR and DQ mols. in vitro. In contrast, the second epitope, T1, which is located in the CS repeat region, was recognized by T cells in the context of DQ6 (DQB1*0603) and did not bind with high affinity to any of the class II mols. tested in the peptide binding assays. The in vitro patterns of peptide/HLA interactions correlated with immunogenicity in vivo. A multiple antigen peptide (MAP) contg. the aa 326-345 epitope elicited responses in eight inbred strains (H-2a,b,d,k,p,q,r,s), while the T1 MAP was recognized by only a single haplotype, H-2b. The combination of the universal aa 326-345 T cell epitope and the T1 repeat in a di-epitope MAP overcame the genetic restriction to the P. falciparum CS repeat region and elicited antisporozoite Ab responses in all of the MAP-immunized mice. Synthetic peptide **malaria** vaccines

contg. the aa 326-345 universal T cell epitope would be expected to elicit parasite-specific immune responses in both sporozoite-primed and naive individuals of diverse genetic backgrounds.

IT **151113-09-6P**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(binding of **malaria** T cell epitopes to human DR and DQ mols. and identification of a universal T cell epitope in the Plasmodium falciparum circumsporozoite protein)

L3 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:647465 HCAPLUS
DOCUMENT NUMBER: 119:247465
TITLE: CD4+ T cell clones obtained from Plasmodium falciparum sporozoite-immunized volunteers recognize polymorphic sequences of the circumsporozoite protein
AUTHOR(S): Moreno, Alberto; Clavijo, Pedro; Edelman, Robert; Davis, Jonathan; Sztein, Marcelo; Sinigaglia, Francesco; Nardin, Elizabeth
CORPORATE SOURCE: Sch. Med., New York Univ., New York, NY, 10010, USA
SOURCE: Journal of Immunology (1993), 151(1), 489-99
CODEN: JOIMA3; ISSN: 0022-1767
DOCUMENT TYPE: Journal
LANGUAGE: English

AB CD4+ T cell clones were derived from three volunteers who were protected against **malaria** after immunization with Plasmodium falciparum sporozoites. T cells specific for an epitope, Pf Th/Tc, contained in amino acids 326 to 345 of the circumsporozoite (CS) protein of P. falciparum (NF54) were derived from all three volunteers. DR1-, -4-, -7-, and -9-restricted T cell clones were found to recognize overlapping, but distinct, epitopes within a 20-mer peptide representing the amino acid 326 to 345 sequence. The Pf Th/Tc epitope contains part of the highly conserved region II as well as part of a polymorphic domain of the P. falciparum CS protein. All of the overlapping epitopes within peptide 326-345 contained at least three amino acids of the amino terminus of the conserved region II, in addn. to a variable no. of amino acids in the polymorphic region. The DR4-, -7-, and -9-restricted but not the DR1-restricted T cell clones recognized variant peptides representing this polymorphic region of the CS protein of P. falciparum isolates from Africa, Asia, and South America.

IT **151113-09-6**
RL: BIOL (Biological study)
(HLA-DR-restricted T cell clone recognition of, of circumsporozoite protein of Plasmodium falciparum in humans)

L3 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1993:493517 HCAPLUS
DOCUMENT NUMBER: 119:93517
TITLE: Hybrid protein with Plasmodium CS protein sequence and hepatitis B surface antigen sequence, and use for vaccine against **malaria**

INVENTOR(S): De Wilde, Michel; Cohen, Joseph
PATENT ASSIGNEE(S): Smithkline Beecham Biologicals S.A., Belg.
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9310152	A1	19930527	WO 1992-EP2591	19921111
W: AU, CA, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
AU 9229278	A1	19930615	AU 1992-29278	19921111
EP 614465	A1	19940914	EP 1992-923486	19921111
EP 614465	B1	19990317		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, SE				
JP 07501213	T2	19950209	JP 1992-508957	19921111
AT 177755	E	19990415	AT 1992-923486	19921111
ES 2129461	T3	19990616	ES 1992-923486	19921111
ZA 9208770	A	19940513	ZA 1992-8770	19921113
US 5928902	A	19990727	US 1996-760797	19961204
AU 9714717	A1	19970612	AU 1997-14717	19970214
AU 712409	B2	19991104		
US 6169171	B1	20010102	US 1997-932929	19970918

PRIORITY APPLN. INFO.:

GB 1991-24390	A	19911116
US 1992-842694	A	19920227
WO 1992-EP2591	A	19921111
US 1995-442612	B1	19950517
US 1996-663371	B1	19960613

AB Hybrid proteins (RTS and RTS*) are disclosed which include a portion of the CS protein of P. falciparum and of the surface antigen of hepatitis B virus (HBsAg). The RTS hybrid consists of (1) a Met residue derived from the Saccharomyces cerevisiae TDH3 gene sequence; (2) a Met-Ala-Pro sequence; (3) a P. falciparum CS protein fragment; (4) an Arg residue; (5) a carboxyl-terminal tetrapeptide sequence (Pro-Val-Thr-Asn) of hepatitis B pre-S2 protein; and (6) hepatitis B S-protein sequence. Also disclosed is a mixed multimeric lipoprotein particle contg. the hybrid protein and HBsAg. The hybrid proteins and particles are useful for anti-**malaria** vaccines. Expression cassette construction is described, and amino acid sequences (and corresponding nucleotide sequences) are included. (RTS,S) lipoprotein particles induced, both in mice and monkeys, a high antibody response directed against the repeat and nonrepeat CS epitopes and against the S protein of the HBsAg carrier. The antibodies elicited in the 2 animal species effectively prevented invasion of cultured human hepatoma cells by P. falciparum sporozoites.

IT **149121-48-2**
RL: PRP (Properties)
(amino acid sequence of, for vaccine against **malaria**)

L3 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:649667 HCAPLUS
DOCUMENT NUMBER: 117:249667
TITLE: In vitro immune recognition of synthetic

peptides from the Plasmodium falciparum CS protein by individuals naturally exposed to different sporozoite challenge

AUTHOR(S): Esposito, Fulvio; Lombardi, Stefania; Modiano, David; Habluetzel, Annette; DelNero, Luca; Lamizana, Lansina; Pietra, Virginio; Rotigliano, Gianfranco; Corradin, Giampietro; et al.

CORPORATE SOURCE: Dip. Biol. Mol. Cell. Anim., Univ. Camerino, Camerino, 62032, Italy

SOURCE: Immunology Letters (1992), 33(2), 187-99
CODEN: IMLED6; ISSN: 0165-2478

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The impact of duration and intensity of sporozoite challenge on the in vitro cell immune response to synthetic peptides of the circumsporozoite (CS) protein of P. falciparum was investigated in residents of a **malaria** endemic area in Burkina Faso (West Africa). Lymphocyte proliferation and interferon-.gamma. (IFN-.gamma.) prodn. were used to assess immune recognition of synthetic peptides corresponding to the polymorphic Th2R and Th3R regions, to the conserved CS.T3 sequence, and to NANP and degenerate NVDP repeats. Immune responses were measured in adults and children from a village where they received >100 sporozoite inoculations/yr and in adults living in a town, exposed to a 10-100 times lower challenge. A lifetime intense exposure apparently increased the ability to proliferate in response to most peptides in the rural adults, who all produced antibodies to NANP repeats. Surprisingly, cell cultures from these subjects seldom contained appreciable levels of IFN-.gamma.. In the urban adults, possibly due to the moderate challenge they are exposed to, differences in the proliferative potentials of the peptides were detected. The highest stimulation indexes were obtained with the genetically unrestricted CS.T3 peptide. Remarkably, proliferative responses to Th2R and Th3R correlated with the humoral response to the CS protein, indicating a T helper significance of the epitopes. The differing proliferative potential of the polymorphic epitopes in the urban adults suggests that polymorphism might delay the development of immune responsiveness under conditions of sporadic transmission. The children from the highly malarious village displayed the lowest proliferative scores, accompanied by a high prevalence of antibodies to NANP repeats. The hypothesis is thus proposed that a pure B cell reactivity to NANP repeats could ontogenetically precede the mounting of a conventional T-B cooperative immune response.

IT **116111-16-1**
RL: BIOL (Biological study)
(CS protein of Plasmodium falciparum immune recognition in humans in sporozoite challenge in relation to)

L3 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:233694 HCAPLUS

DOCUMENT NUMBER: 116:233694

TITLE: Phagocytosis of liposomes by macrophages: intracellular fate of liposomal **malaria** antigen

AUTHOR(S): Verma, Jitendra N.; Wassef, Nabila M.; Wirtz, Robert A.; Atkinson, Carter T.; Aikawa, Masamichi; Loomis, Lawrence D.; Alving, Carl R.

CORPORATE SOURCE: Dep. Membr. Biochem., Walter Reed Army Inst.

Res., Washington, DC, 20307-5100, USA
SOURCE: Biochimica et Biophysica Acta (1991), 1066(2), 229-38
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Liposomes contg. a synthetic recombinant protein were phagocytosed by macrophages, and the internalized protein was recycled to the cell surfaces where it was detected by ELISA. The transit time of the liposome-encapsulated protein from initial phagocytosis of liposomes to appearance of protein on the surfaces of macrophages was detd. by pulse-chase expts. The macrophages were pulsed with liposomes contg. protein and chased with empty liposomes, and vice versa. The amt. and rate of protein antigen expression at the cell surfaces depended on the quantity of encapsulated protein ingested by the macrophages. Although liposomes were rapidly taken up by macrophages, the liposome-encapsulated protein was antigenically expressed for a prolonged period (at least 24 h) on the cell surface. Liposomes were visualized inside vacuoles in the macrophages by immunogold electron microscopy. The liposomes accumulated along the peripheries of the vacuoles and many of them apparently remained intact for a long time (>6 h). However, nonliposomal free protein was also detected in the cytoplasm surrounding these vacuoles, and it was concluded that the free protein in the cytoplasm was probably en route to the macrophage surface. Exposure of the cells to ammonium chloride did not inhibit the appearance of liposomal antigenic epitopes on the cell surface, and this suggests that expression of the liposomal antigenic epitopes at the surface was not a pH-sensitive phenomenon. There was no effect on a liposomal adjuvant, lipid A, on the rate or extent of surface expression of the liposomal protein.
IT **140877-00-5**, Antigen R 32NS181 (influenza virus-Plasmodium falciparum 212-amino acid synthetic)
RL: BIOL (Biological study)
(antigen R32NS1, liposomes contg., phagocytosis of, by macrophage, intracellular antigen expression after)

L3 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1991:490072 HCAPLUS
DOCUMENT NUMBER: 115:90072
TITLE: Toward the elucidation of the mechanism of attachment and entry of **malaria** sporozoites into cells: synthetic polypeptides from the circumsporozoite protein of Plasmodium falciparum bind calcium and interact with model phospholipid membranes
AUTHOR(S): Verdini, Antonio S.; Chiappinelli, Lorella; Zanobi, Antonio
CORPORATE SOURCE: Italfarmaco Res. Cent., Cinisello Balsamo, 20092, Italy
SOURCE: Biopolymers (1991), 31(6), 587-94
CODEN: BIPMAA; ISSN: 0006-3525
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The combined use of CD, Fourier transform IR (FTIR), and attenuated total reflectance FTIR spectroscopies revealed that synthetic polypeptide models of the P. falciparum circumsporozoite (CS) protein repeat domain bind calcium ions in helicogenic environments.

Ca2+-(NANP)n complexes (n .gtoreq. 20) interact vectorially with model phospholipid membranes, orienting their polypeptide axes preferentially along those of the lipid acyl chains. It is proposed that the P. falciparum CS protein central region, rather than acting as a mol. lure helping the parasite to evade host immune control, plays, as a specific Ca2+ macroligand, a crit. functional role during attachment, invasion, and development of the **malaria** parasite in the hepatic cell.

IT **116111-16-1**
RL: BIOL (Biological study)
(calcium binding and phospholipid membrane interactions of, structure and function of circumsporozoite protein of Plasmodium falciparum in relation to)

L3 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1990:152771 HCAPLUS
DOCUMENT NUMBER: 112:152771
TITLE: The circumsporozoite protein gene from NF54, a Plasmodium falciparum isolate used in **malaria** vaccine trials
AUTHOR(S): Caspers, Patrick; Gentz, Reiner; Matile, Hugues; Pink, J. Richard; Sinigaglia, Francesco
CORPORATE SOURCE: Cent. Res. Units, F. Hoffmann-La Roche and Co., Ltd., Basel, CH-4002, Switz.
SOURCE: Molecular and Biochemical Parasitology (1989), 35(2), 185-9
CODEN: MBIPDP; ISSN: 0166-6851
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The circumsporozoite protein gene of P. falciparum isolate NF54 was sequenced. The gene encoded a protein of 405 amino acids. The central region of the protein contained 40 repeats of the Asn-Ala-Asn-Pro sequence. The cloned gene for the circumsporozoite protein may be used in vaccine prepn.

IT **125854-16-2**, Antigen CS (Plasmodium falciparum strain NF54 reduced)
RL: PRP (Properties)
(amino acid sequence of)

L3 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1989:484065 HCAPLUS
DOCUMENT NUMBER: 111:84065
TITLE: Conjugate **malaria** vaccine
INVENTOR(S): Sadoff, Jerald C.; Cryz, Stanley J., Jr.
PATENT ASSIGNEE(S): Swiss Serum and Vaccine Institute Berne, Switz.
SOURCE: Eur. Pat. Appl., 24 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 289110	A2	19881102	EP 1988-300813	19880201
EP 289110	A3	19900124		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CA 1329124	A1	19940503	CA 1988-557889	19880201

AU 8811188	A1	19880804	AU 1988-11188	19880202
AU 624324	B2	19920611		
JP 02022300	A2	19900125	JP 1988-22669	19880202
PRIORITY APPLN. INFO.:			US 1987-9441	19870202
			US 1988-150359	19880129

OTHER SOURCE(S): MARPAT 111:84065

AB Immunogenic conjugates are prepd. by covalently linking a carrier protein to a peptide forming an antigenic determinant of circumsporozoite protein via at least one spacer mol. The conjugates are vaccines against **malaria**. Gram neg. outer membrane proteins are treated with an anhydride to form a water-sol. nontoxic carrier protein for use in a conjugate vaccine. Choleragenoid was coupled to H-(Asn-Pro-Asn-Ala)3-OH using both succinic anhydride and adipic acid dihydrazide to give an antimalaria conjugate. A response on an ELISA test was seen for 2/3 human volunteers injected i.m. Reactions following vaccination were mild and transient, and std. physiol. tests showed no change following vaccination, indicating a lack of toxicity.

IT **117924-88-6DP**, protein conjugates **122156-87-0DP**, protein conjugates
RL: PREP (Preparation)
(prepn. of, for antimalaria vaccine)

L3 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1989:34817 HCAPLUS
DOCUMENT NUMBER: 110:34817
TITLE: Expression in yeast of DNA encoding hepatitis B surface antigen-heterologous antigen fusion proteins for use as vaccines
INVENTOR(S): Cabezon, Teresa; De Wilde, Michel; Harford, Nigel
PATENT ASSIGNEE(S): Smith Kline-Rit S. A., Belg.
SOURCE: Eur. Pat. Appl., 101 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 278940	A2	19880817	EP 1988-870008	19880125
EP 278940	A3	19881207		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
ZA 8800488	A	19881026	ZA 1988-488	19880125
SU 1746887	A3	19920707	SU 1988-4355055	19880126
DK 8800431	A	19880731	DK 1988-431	19880128
AU 8810930	A1	19880804	AU 1988-10930	19880128
NO 8800395	A	19880801	NO 1988-395	19880129
FI 8800428	A	19880913	FI 1988-428	19880129
JP 01063382	A2	19890309	JP 1988-21137	19880129
DD 274052	A5	19891206	DD 1988-312554	19880129
HU 50876	A2	19900328	HU 1988-409	19880129
DD 284899	A5	19901128	DD 1988-334294	19880129
DD 285612	A5	19901219	DD 1988-334296	19880129
DD 285994	A5	19910110	DD 1988-334295	19880129
CN 1031395	A	19890301	CN 1988-100483	19880130
PRIORITY APPLN. INFO.:			US 1987-9325	19870130

AB Plasmids contg. DNA encoding part or all of the pre-S region of hepatitis B surface antigen (HBsAg) fused to DNA encoding an heterologous antigen (e.g. a Plasmodium circumsporozoite (CS) protein epitope, an HIV antigenic peptide) are constructed and expressed in yeast. Immunogenic particles are produced which can be used as vaccines. Plasmid pRIT12574, encoding a fusion protein of pre-S2 HBsAg and tetrapeptide repeats of the Plasmodium CS protein, was constructed. Yeast transformed with this plasmid produced 22 nm-like particles which were purified in the customary manner from the cell ext. Rabbits immunized with these particles developed antibodies to both CS and HBsAg. Sera from these rabbits reacted strongly in a CS pptn. reaction and inhibited sporozoite invasion on hepatoma cells in vitro.

IT **92480-13-2**, Antigen CS (Plasmodium falciparum clone 7G8 surface precursor reduced)
RL: PRP (Properties)
(amino acid sequence of)

L3 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1989:5809 HCAPLUS
DOCUMENT NUMBER: 110:5809
TITLE: Reversed-phase liquid chromatography and sodium dodecyl sulfate polyacrylamide gel electrophoresis characteristics of a recombinant DNA derived **malaria** antigen
AUTHOR(S): Benedek, K.; Hughes, B.; Seaman, M. B.; Swadesh, J. K.
CORPORATE SOURCE: Smith Kline and French Lab., King of Prussia, PA, 19406-0939, USA
SOURCE: Journal of Chromatography (1988), 444, 191-202
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Results are presented from anal. of a sample of SK&F 105154 (R32NS181), a amalaria vaccine candidate produced in Escherichia coli, and some anal. issues of general relevance to the characterization of such products derived from recombinant DNA technol. are discussed. Anomalous migration and staining behavior were obsd. in SDS-PAGE. Reversed-phase liq. chromatog. (RPLC) appeared to resolve 4 minor components from the principal band, but the minor peaks were found to consist of numerous components resolvable by SDS-PAGE. Western blotting visualized certain components that were not adequately stained by either Coomassie or Ag stain. None of the techniques that were employed were individually adequate to characterize the sample, but, taken together, were adequate to characterize the sample and to identify one principal degrdn. pathway. Degrdn. within the NS181 region decreases the RPLC retention time, while degrdn. within the R32 segment increases the retention time.

IT **117924-89-7**
RL: BIOL (Biological study)
(as **malaria** vaccine candidate, characterization of, methods for)

L3 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1988:529704 HCAPLUS
DOCUMENT NUMBER: 109:129704
TITLE: Preparation of immunologically active peptides

for preparation of **malaria** vaccines and for detection of antibodies

INVENTOR(S): Bernardi, Adriano; Bonelli, Fabio; Pessi, Antonello; Verdini, Antonio Silvio

PATENT ASSIGNEE(S): Eniricerche S.p.A., Italy

SOURCE: Ger. Offen., 7 pp.
CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3741183	A1	19880609	DE 1987-3741183	19871204
DE 3741183	C2	19910606		
ZA 8708903	A	19880727	ZA 1987-8903	19871126
CH 672491	A	19891130	CH 1987-4640	19871127
SE 8704765	A	19880605	SE 1987-4765	19871130
GB 2199038	A1	19880629	GB 1987-28000	19871130
GB 2199038	B2	19910320		
BE 1001692	A5	19900213	BE 1987-1373	19871202
FR 2607703	A1	19880610	FR 1987-16809	19871203
FR 2607703	B1	19930924		
NL 8702921	A	19880701	NL 1987-2921	19871203
US 4843146	A	19890627	US 1987-128082	19871203
CA 1304888	A1	19920707	CA 1987-553481	19871203
AT 8703190	A	19940415	AT 1987-3190	19871203
ES 2005753	A6	19890316	ES 1987-3801	19871204

PRIORITY APPLN. INFO.: IT 1986-22560 19861204

AB H-(Asn-Val-Asp-Pro-Asn-Ala-Asn-Pro)3-(Asn-Ala-Asn-Pro)n-Asn-Ala-OH (I; n .gtoreq. 3) were prepd. for prepn. of **malaria** vaccines and for use in diagnostic kits for detecting antisporozoite antibodies. I (n = 3) (II) was prepd. on pepsyn A resin contg. p-hydroxymethylphenoxyacetate "hooks" using FMOC-protected amino acid anhydrides.

IT **116111-16-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, for prepn. of **malaria** vaccine and for detection of **malaria** antibodies)

IT **116111-20-7D**, hydroxymethylphenoxyacetate resin-bound
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in prepn. of **malaria** intermediate)

L3 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:198973 HCAPLUS

DOCUMENT NUMBER: 102:198973

TITLE: Immunologically active peptides capable of inducing immunization against **malaria** and genes encoding for them

PATENT ASSIGNEE(S): United States Dept. of the Army, USA

SOURCE: U. S. Pat. Appl., 55 pp. Avail. NTIS Order No. PAT-APPL-6-624 564
CODEN: XAXXAV

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 624564	A0	19850104	US 1984-624564	19840626
US 4707357	A	19871117		
ZA 8504697	A	19860226	ZA 1985-4697	19850621
EP 166410	A2	19860102	EP 1985-107794	19850624
EP 166410	A3	19871125		
EP 166410	B1	19921125		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
AU 8543990	A1	19860102	AU 1985-43990	19850624
AU 596561	B2	19900510		
CA 1340431	A1	19990316	CA 1985-485166	19850625
DK 8502891	A	19851227	DK 1985-2891	19850626
DK 166284	B	19930329		
DK 166284	C	19930823		
JP 61149093	A2	19860707	JP 1985-140108	19850626
JP 2561238	B2	19961204		
DK 9101919	A	19911126	DK 1991-1919	19911126
DK 166155	B	19930315		
DK 166155	C	19930809		
JP 06225768	A2	19940816	JP 1993-268294	19930930
JP 07110876	B4	19951129		
JP 07265086	A2	19951017	JP 1995-40679	19950228
JP 2537027	B2	19960925		
JP 07265087	A2	19951017	JP 1995-40692	19950228
JP 2537028	B2	19960925		

PRIORITY APPLN. INFO.: US 1984-624564 19840626

AB Circumsporozoite proteins or fractions thereof capable of eliciting an immunol. response in humans against Plasmodium falciparum (**malaria**) sporozoites are synthesized by peptide coupling reactions on a solid support or by mol. cloning. In the latter case, DNA sequences encoding these immunol. active peptides are cloned on phage .lambda.mPf1 and used to lysogenize Escherichia coli from which the peptides are harvested. Thus, cloned DNA sequences from a P. falciparum gene library were obtained that encode a peptide including the major monoclonal antibody binding sequences (1) 2 consecutive Asn-X-Y-Pro repeats, where x is alanine or valine and Y is asparagine or aspartic acid, (2) Thr-Glu-Trp-Z-Pro-Cys-Ser-Val-Thr-Cys-Gly-Asn-Gly, where Z is serine or threonine, or (3) Lys-Pro-S-T-S-Lys-Leu-Lys-Gln-Pro-U-V-Gly-W-Pro, where S is lysine or asparagine, T is histidine or glutamic acid, U is glycine or asparagine, V is aspartic acid or glutamic acid, and W is asparagine or glutamine. The immunol. active peptides formed by E. coli transformed with these DNA sequences when purified and administered i.m. to i.v. at 0.01-100 .mu.g/kg body wt. provide protection against P. faliciparum sporozoite infection.

IT **92480-13-2 92480-14-3**
RL: PRP (Properties)
(amino acid sequence of)

IT **96281-87-7P**
RL: PREP (Preparation)
(prepn. of, for antimalarial vaccine prodn.)

L3 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1984:564640 HCAPLUS
DOCUMENT NUMBER: 101:164640
TITLE: Structure of the gene encoding the

immunodominant surface antigen on the sporozoite of the human **malaria** parasite Plasmodium falciparum

AUTHOR(S): Dame, John B.; Williams, Jackie L.; McCutchan, Thomas F.; Weber, James L.; Wirtz, Robert A.; Hockmeyer, Wayne T.; Maloy, W. Lee; Haynes, J. David; Schneider, Imogene; et al.

CORPORATE SOURCE: Lab. Parasit. Dis., Natl. Inst. Allergy Infect. Dis., Bethesda, MD, 20205, USA

SOURCE: Science (Washington, DC, United States) (1984), 225(4662), 593-9
CODEN: SCIEAS; ISSN: 0036-8075

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The gene for the circumsporozoite (CS) protein of P. falciparum was cloned, and its nucleotide sequence was detd. The gene encodes a protein of 412 amino acids, as deduced from the nucleotide sequence. The protein contains 41 tandem repeats of a tetrapeptide, 37 of which are Asn-Ala-Asn-Pro [92463-34-8] and 4 of which are Asn-Val-Asp-Pro [92463-35-9]. Monoclonal antibodies against the CS protein of P. falciparum were inhibited from binding to the protein by synthetic peptides of the repeat sequence. The CS protein of P. falciparum and the CS protein of a simian **malaria** parasite, P. knowlesi, have 2 regions of homol., 1 of which is present on either side of the repeat. One region contains 12 of 13 identical amino acids. Within the nucleotide sequence of this region, 25 of 27 nucleotides are conserved. The conservation of these regions in parasites widely sepd. in evolution suggests that they may have a function, such as binding to liver cells, and may represent an invariant target for immunity.

IT **92480-13-2 92480-14-3**
RL: PRP (Properties)
(amino acid sequence of)

E1 THROUGH E29 ASSIGNED

FILE 'REGISTRY' ENTERED AT 15:23:28 ON 06 DEC 2002

L4 29 SEA FILE=REGISTRY ABB=ON PLU=ON (151113-09-6/BI OR 116111-16-1/BI OR 401460-27-3/BI OR 92480-13-2/BI OR 401460-26-2/BI OR 401460-29-5/BI OR 401460-48-8/BI OR 401460-49-9/BI OR 401460-60-4/BI OR 401461-03-8/BI OR 92480-14-3/BI OR 116111-20-7/BI OR 117924-88-6/BI OR 117924-89-7/BI OR 122156-87-0/BI OR 125854-16-2/BI OR 140877-00-5/BI OR 149121-48-2/BI OR 208946-19-4/BI OR 208946-20-7/BI OR 208947-67-5/BI OR 329019-45-6/BI OR 401460-45-5/BI OR 401552-42-9/BI OR 401556-50-1/BI OR 401556-53-4/BI OR 407646-80-4/BI OR 467522-97-0/BI OR 96281-87-7/BI)

=> s l4 and l1
L5 29 L4 AND L1

L5 ANSWER 1 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **467522-97-0** REGISTRY
CN Protein (Plasmodium falciparum strain 3D7 clone MAL3P2 gene PFC0210c) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN GenBank AL034558-derived protein GI 4493889

```
CI   MAN
SQL  396

SEQ      1 MRKLAILSVS SFLFVEALFQ EYQCYGSSSN TRVLNELNYD NAGTNLYNEL
         51 EMNYYGKQEN WYSLKKNSRS LGENDDGNNE DNEKLRKPKH KKLKQPADGN
        101 PDPNANPNVD PNANPNVDPN ANPNVDPNAN PNANPNANPN ANPNANPNAN
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        151 PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNVDPN
                                                          =========
        201 ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
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        251 PNANPNANPN ANPNANPNAN PNKNNQGNGQ GHNMPNDPNR NVDENANANS
        301 AVKNNNNEEP SDKHIKEYLN KIQNSLSTEW SPCSVTCGNG IQVRIKPGSA
                           ==== ========== ======
        351 NKPKDELDYA NDIEKKICKM EKCSSVFNVV NSSIGLIMVL SFLFLN
HITS AT:    120-139, 192-211, 317-336

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**

REFERENCE   1:  137:289735

L5   ANSWER 2 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   407646-80-4  REGISTRY
CN   Circumsporozoite protein (Plasmodium falciparum strain FCC-1/HN gene
     csp fragment) (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   GenBank AF315469-derived protein GI 11527999
CI   MAN
SQL  383

SEQ      1 FQEYQCYGSS SNTRVLNELN YDNAGTNLYN ELEMNYYGKQ ENWYSLKKNS
         51 RSLGENDDGN NNNGDNGREG KDEDKRDGNN EDNEKLRKPK HKKLKQPGDG
        101 NPDPNANPNV DPNANPNVDP NANPNVDPNA NPNANPNANP NANPNANPNA
                                 ========== ==========
        151 NPNANPNANP NANPNANPNA NPNANPNANP NVDPNANPNA NPNANPNANP
                                      ==== ========== ======
        201 NANPNANPNA NPNANPNANP NANPNANPNA NPNANPNANP NANPNANPNA
        251 NPNANPNANP NANPNANPNA NPNANPNANP NANPNANPNA NPNKNNQGNG
        301 QGHNMPNDPN RNVDENANAN NAVKNNNNEE PSDKHIEQYL KKIQYSLSTE
        351 WSPCSVTCGN GIQVRIKPGS ADKPKDELDY END
HITS AT:    121-140, 177-196

REFERENCE   1:  136:289638

L5   ANSWER 3 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   401556-53-4  REGISTRY
CN   130: PN: WO0214478 SEQID: 267 unclaimed protein (9CI)  (CA INDEX
     NAME)
CI   MAN
SQL  191

SEQ      1 MDIDPYKEFG ATVELLSFLP SDFFPSVRDL LDTASALYRE ALESPEHCSP
         51 HHTALRQAIL CWGELMTLAT WVGVNLEDGI NANPNANPNA NPNANPELPA
        101 SRDLVVSYVN TNMGLKFRQL LWFHISCLTF GRETVIEYLV SFGVWIRTPP
        151 AYRPPNAPIL STLPETTVVG IEYLNKIQNS LSTEWSPCSV T
                                 ========== ========== =
HITS AT:    171-191
```

REFERENCE 1: 136:215388

L5 ANSWER 4 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401556-50-1** REGISTRY
CN 122: PN: WO0214478 SEQID: 263 unclaimed DNA (9CI) (CA INDEX NAME)
CI MAN
SQL 171

SEQ 1 MDIDPYKEFG ATVELLSFLP SDFFPSVRDL LDTASALYRE ALESPEHCSP
51 HHTALRQAIL CWGELMTLAT WVGVNLEDPA SRDLVVSYVN TNMGLKFRQL
101 LWFHISCLTF GRETVIEYLV SFGVWIRTPP AYRPPNAPIL STLPETTVVG
151 IEYLNKIQNS LSTEWSPCSV T
========== ========== =

HITS AT: 151-171

REFERENCE 1: 136:215388

L5 ANSWER 5 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401552-42-9** REGISTRY
CN Antigen CS (Plasmodium falciparum clone V12.pf3.1) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 270: PN: WO0214478 SEQID: 269 claimed protein
CI MAN
SQL 195

SEQ 1 MDIDPYKEFG ATVELLSFLP SDFFPSVRDL LDTASALYRE ALESPEHCSP
51 HHTALRQAIL CWGELMTLAT WVGVNLEDGI NANPNVDPNA NPNANPNANP
========== ==========
101 ELPASRDLVV SYVNTNMGLK FRQLLWFHIS CLTFGRETVI EYLVSFGVWI
151 RTPPAYRPPN APILSTLPET TVVGIEYLNK IQNSLSTEWS PCSVT
====== ========== =====

HITS AT: 81-100, 175-195

REFERENCE 1: 136:215388

L5 ANSWER 6 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401461-03-8** REGISTRY
CN L-Threonine, L-threonyl-L-threonyl-L-valyl-L-valylglycyl-L-isoleucyl-L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 183: PN: WO0213765 SEQID: 166 unclaimed sequence
CN 284: PN: WO0214478 SEQID: 283 claimed sequence
SQL 26

SEQ 1 TTVVGIEYLN KIQNSLSTEW SPCSVT
===== ========== ======

HITS AT: 6-26

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

L5 ANSWER 7 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-60-4** REGISTRY

CN L-Threonine, L-isoleucyl-L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 121: PN: WO0214478 SEQID: 120 claimed sequence
CN 95: PN: WO0213765 SEQID: 79 unclaimed sequence
SQL 21

SEQ 1 IEYLNKIQNS LSTEWSPCSV T
========== ========== =
HITS AT: 1-21

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

L5 ANSWER 8 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-49-9** REGISTRY
CN L-Leucine, L-isoleucyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-.alpha.-glutamyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 83: PN: WO0213765 SEQID: 43 unclaimed sequence
CN 85: PN: WO0214478 SEQID: 84 claimed sequence
SQL 23

SEQ 1 INANPNVDPN ANPNANPNAN PEL
========= ========== =
HITS AT: 2-21

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

L5 ANSWER 9 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-48-8** REGISTRY
CN L-Leucine, L-isoleucyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-.alpha.-glutamyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 82: PN: WO0213765 SEQID: 40 unclaimed sequence
CN 82: PN: WO0214478 SEQID: 81 claimed sequence
SQL 31

SEQ 1 INANPNVDPN ANPNANPNAN PNVDPNANPE L
========= ========== =
HITS AT: 2-21

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

L5 ANSWER 10 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-45-5** REGISTRY
CN L-Threonine, glycyl-L-isoleucyl-L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 78: PN: WO0213765 SEQID: 24 claimed sequence
SQL 22

SEQ 1 GIEYLNKIQN SLSTEWSPCS VT
========== ========== ==
HITS AT: 2-22

REFERENCE 1: 136:198912

L5 ANSWER 11 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-29-5** REGISTRY
CN L-Proline, L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 25: PN: WO0214478 SEQID: 24 claimed sequence
CN 59: PN: WO0213765 SEQID: 5 claimed sequence
SQL 28

SEQ 1 NANPNVDPNA NPNANPNANP NVDPNANP
========== ==========
HITS AT: 1-20

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

L5 ANSWER 12 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-27-3** REGISTRY
CN L-Proline, L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 23: PN: WO0214478 SEQID: 22 claimed sequence
CN 57: PN: WO0213765 SEQID: 3 claimed sequence
SQL 20

SEQ 1 NANPNVDPNA NPNANPNANP
========== ==========
HITS AT: 1-20

REFERENCE 1: 137:92286

REFERENCE 2: 136:215388

REFERENCE 3: 136:198912

L5 ANSWER 13 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **401460-26-2** REGISTRY
CN L-Proline, L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 22: PN: WO0214478 SEQID: 21 claimed sequence
CN 56: PN: WO0213765 SEQID: 2 claimed sequence
SQL 24

SEQ 1 NANPNVDPNA NPNANPNANP NVDP
========== ==========
HITS AT: 1-20

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

L5 ANSWER 14 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **329019-45-6** REGISTRY
CN L-Lysine, N2,N6-bis[N2,N6-bis(L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl-L-threonyl)-L-lysyl]-L-lysyl-L-seryl-L-seryl-N6-[S-[2,3-bis[(1-oxohexadecyl)oxy]propyl]-N-(1-oxohexadecyl)-L-cysteinyl]-L-lysyl-L-seryl-L-lysyl-L-lysyl-L-lysyl-L-lysyl- (9CI) (CA INDEX NAME)
CI MAN
SQL 204,58,49,48,48,1

SEQ 1 DPNANPNVDP NANPNVNANP NANPNANPEY LNKIQNSLST EWSPCSVTKK
== ========== ========
51 SSKSKKKK
HITS AT: 29-48

SEQ 1 DPNANPNVDP NANPNVNANP NANPNANPEY LNKIQNSLST EWSPCSVTK
== ========== ========
HITS AT: 29-48

SEQ 1 DPNANPNVDP NANPNVNANP NANPNANPEY LNKIQNSLST EWSPCSVT
== ========== ========
HITS AT: 29-48

SEQ 1 DPNANPNVDP NANPNVNANP NANPNANPEY LNKIQNSLST EWSPCSVT
== ========== ========
HITS AT: 29-48

SEQ 1 C

REFERENCE 1: 134:221126

L5 ANSWER 15 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **208947-67-5** REGISTRY
CN Circumsporozoite antigen (Plasmodium falciparum fragment) (9CI) (CA INDEX NAME)
CI MAN
SQL 126

SEQ 1 NANPNVDPNA NPNVDPNANP NVDPNANPNA NPNANPNANP NANPNANPNA
==== ========== ======
51 NPNANPNANP NANPNANPNA NPNANPNANP NANPNANPNA NPNANPNANP
101 NANPNANPEW SPCSVTCGNG IQVRIK
HITS AT: 17-36

REFERENCE 1: 129:64049

L5 ANSWER 16 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **208946-20-7** REGISTRY
CN L-Threonine, L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl-, 1,1',1'',1'''-tetraamide with N2,N6-bis[N2,N6-bis[[(carboxymethyl)oxidoimino]methyl]-L-lysyl]-L-lysyl-L-tyrosine (9CI) (CA INDEX NAME)
CI MAN
SQL 200,49,49,49,49,3,1

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========
HITS AT: 30-49

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========
HITS AT: 30-49

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========
HITS AT: 30-49

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========
HITS AT: 30-49

SEQ 1 KKY

SEQ 1 K

REFERENCE 1: 129:66591

L5 ANSWER 17 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **208946-19-4** REGISTRY
CN L-Threonine, L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-

valyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl-, 1,1',1'',1'''-tetraamide with N2,N6-bis[N2,N6-bis[[(carboxymethyl)oxidoimino]methyl]-L-lysyl]-L-lysyl-L-seryl-L-seryl-N6-[S-[2,3-bis[(1-oxohexadecyl)oxy]propyl]-N-(1-oxohexadecyl)-L-cysteinyl]-L-lysyl-L-seryl-L-lysyl-L-lysyl-L-lysyl-L-lysine (9CI) (CA INDEX NAME)

CI MAN

SQL 208,49,49,49,49,10,1,1

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========

HITS AT: 30-49

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========

HITS AT: 30-49

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========

HITS AT: 30-49

SEQ 1 GDPNANPNVD PNANPNVNAN PNANPNANPE YLNKIQNSLS TEWSPCSVT
= ========== =========

HITS AT: 30-49

SEQ 1 KKSSKSKKKK

SEQ 1 C

SEQ 1 K

REFERENCE 1: 129:66591

L5 ANSWER 18 OF 29 REGISTRY COPYRIGHT 2002 ACS

RN **151113-09-6** REGISTRY

CN L-Threonine, L-.alpha.-glutamyl-L-tyrosyl-L-leucyl-L-asparaginyl-L-lysyl-L-isoleucyl-L-glutaminyl-L-asparaginyl-L-seryl-L-leucyl-L-seryl-L-threonyl-L-.alpha.-glutamyl-L-tryptophyl-L-seryl-L-prolyl-L-cysteinyl-L-seryl-L-valyl- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 166: PN: WO0213765 SEQID: 148 claimed sequence

CN 60: PN: WO0214478 SEQID: 59 claimed sequence

SQL 20

SEQ 1 EYLNKIQNSL STEWSPCSVT
========== ==========

HITS AT: 1-20

REFERENCE 1: 136:215388

REFERENCE 2: 136:198912

REFERENCE 3: 134:221126

REFERENCE 4: 129:148063

REFERENCE 5: 129:66591

REFERENCE 6: 127:204127

REFERENCE 7: 119:247465

L5 ANSWER 19 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **149121-48-2** REGISTRY
CN 207-404-Antigen CS (Plasmodium falciparum strain NF54 reduced), 207-L-methionine-208-L-methionine-209-L-alanine-210-L-proline-400-glycine-401-L-proline-403-L-threonine-404-L-asparagine-, (404.fwdarw.1')-protein with antigen (hepatitis B virus subtype adw small surface reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 424

```
SEQ      1 MMAPDPNANP NANPNANPNA NPNANPNANP NANPNANPNA NPNANPNANP
        51 NANPNANPNA NPNANPNANP NANPNANPNK NNQGNGQGHN MPNDPNRNVD
       101 ENANANSAVK NNNNEEPSDK HIKEYLNKIQ NSLSTEWSPC SVTCGNGIQV
                                   ======= ========== ===
       151 RIKPGSANKP KDELDYANDI EKKICKMEKC SSVFNVVNSS IGLGPVTNME
       201 NITSGFLGPL LVLQAGFFLL TRILTIPQSL DSWWTSLNFL GGSPVCLGQN
       251 SQSPTSNHSP TSCPPICPGY RWMCLRRFII FLFILLLCLI FLLVLLDYQG
       301 MLPVCPLIPG STTTNTGPCK TCTTPAQGNS MFPSCCCTKP TDGNCTCIPI
       351 PSSWAFAKYL WEWASVRFSW LSLLVPFVQW FVGLSPTVWL SAIWMMWYWG
       401 PSLYSIVSPF IPLLPIFFCL WVYI
HITS AT:   124-143
```

REFERENCE 1: 119:93517

L5 ANSWER 20 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **140877-00-5** REGISTRY
CN Antigen R 32NS181 (influenza virus-Plasmodium falciparum 212-amino acid synthetic) (9CI) (CA INDEX NAME)
CI MAN
SQL 212

```
SEQ      1 MDPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
        51 PNANPNANPN ANPNVDPNAN PNANPNANPN ANPNANPNAN PNANPNANPN
                   = ========== =========
       101 ANPNANPNAN PNANPNANPN ANPNANPNVD PNTVSSFQVD CFLWHVRKRV
       151 ADQELGDAPF LDRLRRDQKS LRGRGSTLGL DIETATRAGK QIVERILKEE
       201 SDEALKMTML VN
HITS AT:   60-79
```

REFERENCE 1: 116:233694

L5 ANSWER 21 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **125854-16-2** REGISTRY
CN Antigen CS (Plasmodium falciparum strain NF54 reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 409

```
SEQ      1 MMRKLAILSV SSFLFVEALF QEYQCYGSSS NTRVLNELNY DNAGTNLYNE
        51 LEMNYYGKQE NWYSLKKNSR SLGENDDGNN EDNEKLRKPK HKKLKQPADG
```

```
       101 NPDPNANPNV DPNANPNVDP NANPNVDPNA NPNANPNANP NANPNANPNA
                                  ========== ==========
       151 NPNANPNANP NANPNANPNA NPNANPNANP NANPNANPNA NPNANPNANP
       201 NANPNANPNV DPNANPNANP NANPNANPNA NPNANPNANP NANPNANPNA
               ====== ========== ====
       251 NPNANPNANP NANPNANPNA NPNANPNANP NANPNKNNQG NGQGHNMPND
       301 PNRNVDENAN ANSAVKNNNN EEPSDKHIKE YLNKIQNSLS TEWSPCSVTC
                                           = ========== =========
       351 GNGIQVRIKP GSANKPKDEL DYANDIEKKI CKMEKCSSVF NVVNSSIGLI
       401 MVLSFLFLN
HITS AT:   121-140, 205-224, 330-349

REFERENCE   1:  112:152771

L5   ANSWER 22 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   122156-87-0  REGISTRY
CN   129-259-Antigen CS (Plasmodium falciparum clone 7G8 surface
     reduced), 129-L-methionine-257-L-valine-258-L-aspartic acid- (9CI)
     (CA INDEX NAME)
CI   MAN
SQL  131

SEQ      1 MDPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
        51 PNANPNANPN ANPNVDPNAN PNANPNANPN ANPNANPNAN PNANPNANPN
                   = ========== =========
       101 ANPNANPNAN PNANPNANPN ANPNANPNVD P
HITS AT:   60-79

REFERENCE   1:  111:84065

L5   ANSWER 23 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   117924-89-7  REGISTRY
CN   126-261-Antigen CS (Plasmodium falciparum clone 7G8 surface
     reduced), 129-L-methionine-257-L-valine-258-L-aspartic
     acid-260-L-leucine-261-L-arginine-, (261.fwdarw.4')-protein with
     44-L-arginine-53-L-aspartic acid-60-L-alanine-82-L-leucine-83-L-
     valine-84-L-asparagine-4-84-protein NS 1 (influenza virus A/FM/1/47
     reduced) (9CI)  (CA INDEX NAME)
CI   MAN
SQL  220

SEQ      1 MDPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
        51 PNANPNANPN ANPNANPNVD PNANPNANPN ANPNANPNAN PNANPNANPN
                      ======= ========== ===
       101 ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNVDPN TVSSFQVDCF
       151 LWHVRKRVAD QELGDAPFLD RLRRDQKSLR GRGSTLGLDI ETATRAGKQI
       201 VERILKEESD EALKMTMLVN
HITS AT:   64-83

REFERENCE   1:  110:5809

L5   ANSWER 24 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   117924-88-6  REGISTRY
CN   129-261-Antigen CS (Plasmodium falciparum clone 7G8 surface
     reduced), 129-L-methionine-257-L-valine-258-L-aspartic
     acid-260-L-leucine-261-L-arginine- (9CI)  (CA INDEX NAME)
CI   MAN
SQL  125
```

```
SEQ      1 MDPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
        51 PNANPNANPN VDPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN
                ===== ========== =====
       101 ANPNANPNAN PNANPNANPN VDPLR
HITS AT:   56-75

REFERENCE   1:  111:84065

REFERENCE   2:  110:13419

L5   ANSWER 25 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   116111-20-7  REGISTRY
CN   L-Alanine, N2-[(9H-fluoren-9-ylmethoxy)carbonyl]-L-asparaginyl-L-
     valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-
     asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-
     prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-
     valyl-L-.alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-
     asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-
     asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-
     asparaginyl-L-prolyl-L-asparaginyl- (9CI)  (CA INDEX NAME)
CI   MAN
SQL  38

SEQ      1 NVDPNANPNV DPNANPNVDP NANPNANPNA NPNANPNA
                      ======== ========== ==
HITS AT:   13-32

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**

REFERENCE   1:  109:129704

L5   ANSWER 26 OF 29  REGISTRY  COPYRIGHT 2002 ACS
RN   116111-16-1  REGISTRY
CN   L-Alanine, L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-
     asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-valyl-L-
     .alpha.-aspartyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-
     prolyl-L-asparaginyl-L-valyl-L-.alpha.-aspartyl-L-prolyl-L-
     asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-
     asparaginyl-L-prolyl-L-asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-
     asparaginyl-L-alanyl-L-asparaginyl-L-prolyl-L-asparaginyl- (9CI)
     (CA INDEX NAME)
CI   MAN
SQL  38

SEQ      1 NVDPNANPNV DPNANPNVDP NANPNANPNA NPNANPNA
                      ======== ========== ==
HITS AT:   13-32

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**

REFERENCE   1:  117:249667

REFERENCE   2:  115:90072

REFERENCE   3:  109:129704

L5   ANSWER 27 OF 29  REGISTRY  COPYRIGHT 2002 ACS
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RN **96281-87-7** REGISTRY
CN 91-340-Antigen CS (Plasmodium falciparum clone 7G8 surface reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 250

SEQ 1 KPKHKKLKQP GDGNPDPNAN PNVDPNANPN VDPNANPNVD PNANPNANPN
51 ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
101 PNVDPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN
151 ANPNANPNAN PNANPNANPN ANPNANPNAN PNKNNQGNGQ GHNMPNDPNR
201 NVDENANANN AVKNNNNEEP SDKHIEQYLK KIKNSISTEW SPCSVTCGNG
HITS AT: 34-53, 98-117

REFERENCE 1: 102:198973

L5 ANSWER 28 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **92480-14-3** REGISTRY
CN Antigen CS (Plasmodium falciparum clone 7G8 surface reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 396

SEQ 1 EALFQEYQCY GSSSNTRVLN ELNYDNAGTN LYNELEMNYY GKQENWYSLK
51 KNSRSLGEND DGNNNNGDNG REGKDEDKRD GNNEDNEKLR KPKHKKLKQP
101 GDGNPDPNAN PNVDPNANPN VDPNANPNVD PNANPNANPN ANPNANPNAN
151 PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN PNVDPNANPN
201 ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
251 PNANPNANPN ANPNANPNAN PNKNNQGNGQ GHNMPNDPNR NVDENANANN
301 AVKNNNNEEP SDKHIEQYLK KIKNSISTEW SPCSVTCGNG IQVRIKPGSA
351 NKPKDELDYE NDIEKKICKM EKCSSVFNVV NSSIGLIMVL SFLFLN
HITS AT: 124-143, 188-207

REFERENCE 1: 102:198973

REFERENCE 2: 101:164640

L5 ANSWER 29 OF 29 REGISTRY COPYRIGHT 2002 ACS
RN **92480-13-2** REGISTRY
CN Antigen CS (Plasmodium falciparum clone 7G8 surface precursor reduced) (9CI) (CA INDEX NAME)
CI MAN
L 412

SEQ 1 MMRKLAILSV SSFLFVEALF QEYQCYGSSS NTRVLNELNY DNAGTNLYNE
51 LEMNYYGKQE NWYSLKKNSR SLGENDDGNN NNGDNGREGK DEDKRDGNNE
101 DNEKLRKPKH KKLKQPGDGN PDPNANPNVD PNANPNVDPN ANPNVDPNAN
151 PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN PNANPNANPN
201 ANPNANPNVD PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNAN
251 PNANPNANPN ANPNANPNAN PNANPNANPN ANPNANPNKN NQGNGQGHNM

```
       301 PNDPNRNVDE NANANNAVKN NNNEEPSDKH IEQYLKKIKN SISTEWSPCS
       351 VTCGNGIQVR IKPGSANKPK DELDYENDIE KKICKMEKCS SVFNVVNSSI
       401 GLIMVLSFLF LN
HITS AT:   140-159, 204-223

REFERENCE   1:  110:34817

REFERENCE   2:  102:198973

REFERENCE   3:  101:164640

FILE 'HOME' ENTERED AT 15:23:55 ON 06 DEC 2002
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